

091023-403

Form C-104
Rev. 10/07CONSTRUCTION VALUE ENGINEERING CHANGE PROPOSAL
MISSOURI DEPARTMENT OF TRANSPORTATION

Contract ID 091023-403 Date 3/3/10
 County Cass Route 71 Job No. JTP2165 J4P1958
 Contractor APAC-Kansas, Inc. Original Bid Cost \$3,599,936.71 \$3,602,949.21
 Designed By APAC-Kansas, Inc. By _____
 Phone _____

VECP - 10-76

1. Description of existing requirements and proposed change(s). Advantages/Disadvantages

The original design called for a 1.75" SP125B 76-22 over the mainline and 1.75" BP-1 to 1" over the shoulders. We propose to perform a ½" scratch mill over the mainline. This would allow for approximately 1772.90 tons of SP125B 76-22, which was set up for irregularities, to be eliminated due to grade control provided by the scratch mill. The scratch milling would eliminate the need to mill and fill the 2" area where the old rumble strip exists. In milling the roadway ½", we would also be able to thin the shoulders down from 1.75" BP-1 to 1.5" BP-1. These two items would eliminate approximately 5990 tons of BP-1.

The ½" scratch mill would make this project eligible for profilograph bonus and eliminate the need for special provision K. This typical section would be identical to at least two other projects built in Missouri.

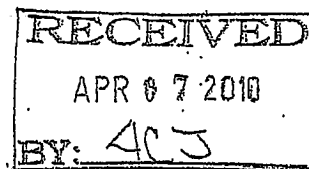
Note: No engineering fees were included in the above proposal. We are requesting that if any engineering is required, MoDOT perform the engineering at no cost to APAC-Kansas, Inc or this proposal. We are submitting this as a VE 50/50 split. APAC will accept no liability due to any DBE reduction as a result of this V.E. APAC to retain all asphalt bonuses/deducts and those bonuses/deducts will not be applied to the final 50/50 V.E. split. APAC to retain all asphalt millings.

The advantage of performing the scratch mill on this project is that it should provide a better product at a lower cost to the tax payers.

APAC-Kansas, Inc. does not foresee any disadvantages to the above proposal.

The estimated net savings is \$207,773.84.

2. Estimate of reduction in construction costs.
3. Prediction of any effects the proposed change(s) will have on other department costs, such as maintenance and operations.



APAC-Kansas, Inc. foresees no additional costs for MODOT.

4. Anticipated date for submittal of detailed change(s) of items required by Section 104.6 of the Specifications.

N/A

(date)

5. Deadline for issuing a change order to obtain maximum cost reduction, noting the effect of contract completion time or delivery schedule.

May 1, 2010

(date)

No change to completion date or schedule.

(effect)

6. Dates of any previous or concurrent submission of the same proposal.

N/A

(date and/or dates)

Additional Comments:

**** Portion Below This Line To Be Filled Out by MoDOT ****

Comments:

See attachment

Paul J. Russ

Submitted By Resident Engineer

4-12-10

Date

Comments:

Value Engineering Proposal, dot

BASED ON THE RECOMMENDATION OF THE
RE AND WITH CONCURRENCE FROM DIVISION
ON THE ASPHALT THICKNESSES AT THE SHOULDER,
WE RECOMMEND APPROVAL

☒ Approval
Recommended
☐ Rejection
Recommended

Elizabeth A. Nyst (PWA)

District Engineer

7/23/10

Date

Comments: PROPOSAL APPROVED SUBJECT TO MINOR
REVISIONS DISCUSSED IN PHONE CONVERSATION WITH
RESIDENT ENGINEER PAUL RUSS,

☒ Approval
☐ Rejection

David D. Goss

State Construction and Materials Engineer

8-1-10

Date

Distribution: Resident Engineer, Project Manager, District Operations Engineer, State Construction and Materials Engineer
*Value Engineering Administrator - *MoDOT, P.O. Box 270, Jefferson City, MO 65102

NOT FEDERAL OVERSIGHT

Rt. 71 Cass County

Original Contract

Item Number	Item Description	Bid Quantity	Units	Unit Price	Total
40	BP-1 64-22	15360.1	TONS	\$47.25	\$725,764.73
50	SP125B 76-22	34812.1	TONS	\$65.80	\$2,290,636.18
240	Cold Milling (3"-)	44443	SY	\$0.65	\$28,887.95
				Total	\$3,045,288.86

VE Proposal

Item Number	Item Description	Bid Quantity	Units	Unit Price	Total
40	BP-1 64-22	9370	TONS	\$47.25	\$442,732.50
50	SP125B 76-22	33039.2	TONS	\$65.80	\$2,173,979.36
240	Cold Milling (3"-) Scratch Milling	339697.16	SY	\$0.65	\$220,803.15
				Total	\$2,837,515.01

Add'l back above original estimate (0.59¢/SY)

includes milling savings
Coldmill spec

Total Savings \$207,773.84

* 1/2" Scratch mill was figured by taking the entire mainline area, less established contract milling pay item quantity (Item 250) The milling item (Item 250) will be paid in addition to the scratch mill and not under-ran.

Additional Comments by Paul Russ, Resident Engineer

Value Engineer Change Proposal
Rte. 71, Cass County
J4P1958

We recommend approval of the VE proposal with the following revisions.

Final project costs will be the basis used to determine actual savings upon the completion of the work.

Proposal to change the profilograph bonus special provision is denied. Special provision K will be used and the bonus will be computed based on the improvement in profile index for each section.

If coldmilling the existing surface is not achieving the desired results (for instance debonding of underlying courses or for any other reason), the operation shall cease and the value engineer proposal will be reevaluated.

Any costs associated with rumble stripe removal, beyond the ½ scratch mill, will be at the contractor's expense.

Any over runs in tack (above plan estimated rates) would be considered additional costs and be taken into account when determining actual savings.

Signed: _____

Paul J. Russ

7-21-10

EXAMPLE

(similar VE in DT)

Form C-104
Rev. 10/07

CONSTRUCTION VALUE ENGINEERING CHANGE PROPOSAL
MISSOURI DEPARTMENT OF TRANSPORTATION

Contract ID	090320-702	Job No.	J7P2165
County	Bates	Route	71
Contractor	APAC-Missouri, Inc.	Original Bid Cost	\$2,961,424.56
Designed By	APAC-Missouri, Inc.	By	David Wilkins
		Phone	417-868-6700

1. Description of existing requirements and proposed change(s). Advantages/Disadvantages

The original design called for a 1.5" SP095C 70-22 over the mainline and 1.5" BP-2 over the shoulders. We propose to perform a 1/2" scratch mill over the mainline. This would allow for approximately 4,894.9 tons of SP095C, which was set up for irregularities, to be eliminated due to grade control provided by the scratch mill. In milling the roadway 1/2", we would also be able to thin the shoulders down from 1.5" BP-2 to 1" BP-2. This would eliminate approximately 4,613 tons of BP-2.

The scratch mill would generate rap off of the project, enough to place back into the SP095C 70-22 mix at 20%. This project was originally bid with 20% rap in the SP095C 70-22, however, we were going to have to haul the rap in from other locations. The cost of hauling this rap amounted to \$2.83/WET TON of the cost of the SP095C 70-22. Therefore, if we do not have to haul the rap in for this project, that savings can be realized in the V.E.

The 1/2" scratch mill would make this project eligible for profilograph bonus. This typical section would be identical to the one built on J7P0855 Rt. 54 St. Clair/Cedar Counties.

Note: No engineering fees were included in the above proposal. We are requesting that if any engineering is required, MoDOT perform the engineering at no cost to APAC-Missouri, Inc or this proposal. We are submitting this as a VE 50/50 split. APAC will accept no liability due to any DBE reduction as a result of this V.E. APAC to retain all asphalt bonuses/deducts and those bonuses/deducts will not be applied to the final 50/50 V.E. split. APAC to retain all asphalt millings.

The advantage of performing the scratch mill on this project is that it should provide a better product at a lower cost to the tax payers.

APAC-Missouri, Inc. does not foresee any disadvantages to the above proposal.

The estimated net savings is \$432,702.64.

2. Estimate of reduction in construction costs.
3. Prediction of any effects the proposed change(s) will have on other department costs, such as maintenance and operations.

APAC-Missouri, Inc. foresees no additional costs for MODOT.

4. Anticipated date for submittal of detailed change(s) of items required by Section 104.6 of the Specifications:

N/A
(date)

5. Deadline for issuing a change order to obtain maximum cost reduction, noting the effect of contract completion time or delivery schedule.

August 20, 2009
(date)

No change to completion date or schedule.
(effect)

6. Dates of any previous or concurrent submission of the same proposal.

N/A
(date and/or dates)

Additional Comments:

**** Portion Below This Line To Be Filled Out by MoDOT ****

Comments:

Basis of final savings should be a result of final tonnages placed on project. I recommend using this proposal.

[Signature]
Submitted By Resident Engineer

8-11-09
Date

Comments:

Value Engineering Proposal.doc

☒ Approval
Recommended
☐ Rejection
Recommended

Becky Batty
District Engineer

8-12-09
Date

Comments:

☐ Approval
☐ Rejection

State Construction and Materials Engineer

Date

Distribution: Resident Engineer, Project Manager, District Operations Engineer, State Construction and Materials Engineer
*Value Engineering Administrator - *MoDOT, P.O. Box 270, Jefferson City, MO 65102

Example

Rt. 71 Bates County

Original Contract

Item Number	Item Description	Bid Quantity	Units	Unit Price	Total
10	BP-2 64-22	13980.2	TONS	\$51.50	\$719,980.30
20	SP095C 70-22	29165	TONS	\$64.85	\$1,891,350.25
				Total	\$2,611,330.55

VE Proposal

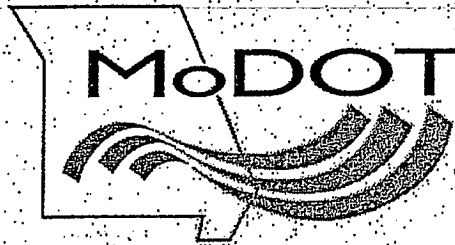
Item Number	Item Description	Bid Quantity	Units	Unit Price	Total
10	BP-2 64-22	9,367.20	TONS	\$51.50	\$482,410.80
XXX1	1/2" SCRATCH MILL*	285053	SY	\$0.67	\$190,985.51
XXX2	SP095C 70-22 w/ RAP from Scratch Mill***	24,270.10	TONS	\$62.02	\$1,505,231.60
				Total	\$2,178,627.91

Total Savings \$432,702.64

* 1/2" Scratch mill was figured by taking the entire mainline area, less established contract milling pay items quantity (Items 160 and 170) These milling items (Items 160 and 170) will be paid in addition to the scratch mill and not under-ran.

***SP095C bid with 20% rap and hauling rap from other locations. By milling rap off of project with scratch mill, we are able to eliminate the hauling of the rap and give the discount to MoDOT.

Missouri
Department
of Transportation



Nevada Project Office
600 West Outer Road
Nevada, Missouri 64772
417-448-1189
Fax 417-448-1188
Toll free 1-888 ASK MoDOT

Randall Aulbur, Resident Engineer

August 31, 2009

Dave Wilkins
APAC-Missouri, Inc. Springfield Branch
P.O. Box 1187
Springfield, MO 65801

Subject: Change Order 003
ID# 090320-702
Job No. J7P2165
Route 71
Bates County

Dear Mr. Wilkins:

Enclosed is Change Order No. 003 for your review and signature. Please sign and return to this office at 600 West Outer Road, Nevada, Missouri 64772, for further processing.

Sincerely,

Randall Aulbur, P.E.
Resident Engineer

Example

Attachments
Copy: File

lag

Date: August 31, 2009
Page 3 of 3

Change Order Reasons

Change Order No. 003
Contract ID 090320-702

Line Item Number	Reason Code	Description and Reason for Change.
5004	VE	

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

CHANGE ORDER

Date August 31, 2009
Page 1 of 3

TO 0011146 APAC-Missouri, Inc. Contractor

Change Order No 003
Contract ID 090320-702
Federal Project No FAF-71-3(44)
Route 71
County bates
Change Order Type Division Approval
Federal Oversight No

YOU ARE HEREBY DIRECTED TO MAKE THE FOLLOWING CHANGES FROM THE CONTRACT

ESTIMATE OF COST OF WORK AFFECTED BY THIS CHANGE ORDER

PROJECT NUMBER	LINE ITEM NUMBER	ITEM CODE	CATEGORY NUMBER	DESCRIPTION	UNITS	UNITS PREVIOUSLY PROVIDED FOR	UNITS TO BE CONSTRUCTED	UNITS OVERRUN, UNDERRUN, CONTINGENT	CONTRACT OR AGREED UNIT PRICE	AMOUNT OF OVERRUN OR PLUS CONTINGENT	AMOUNT OF UNDERRUN OR MINUS CONTINGENT
J7P2185	0010	4011211	0001	BITUMINOUS PAVEMENT MIXTURE PG64-22, (BP-2)	TONS	13,980 2000	9,367 2000	(4,613 0000)	\$51 50		(\$237,569 50)
	0020	4030003	0001	ASPHALTIC CONCRETE MIXTURE PG 70-22 (SP095C MIX)	TONS	29,165 0000	0 0000	(29,165 0000)	\$64 85		(\$1,891,350 25)
	5002	1089902	0001	MISC COSTS Value Engineering Scratch Milling 50/50 Split	EA	0.0000	217,127 1800	217,127 1800	\$1 00	\$217,127 18	
	5003	6221001	0001	COLDMILLING BIT PAVT FOR REM OF SURF ColdMilling Bit Pavement for Removal of Surface	SQYD	0 0000	282,737 0000	282,737 0000	\$0 67	\$189,433 79	
	5004	4030003	0001	ASPH CONC MIXTURE PG 70-22 (SP095C) Asphalt Concrete Mixture PG 70-22 (SP095C)	TONS	0 0000	24,270 1000	24,270,1000	\$62 02	\$1,505,231 60	

SETTLEMENT FOR COST OF THE ABOVE CHANGE TO BE MADE AT CONTRACT UNIT PRICES, EXCEPT AS NOTED:

\$1,911,792.57 (\$2,128,919.75)

Example

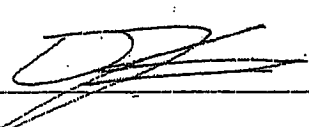
CONTRACT AMOUNT \$2,961,424 56 THE TERMS OF SETTLEMENT OUTLINED ABOVE ARE HEREBY AGREED TO

OVERRUN THIS ORDER 50 00

OVERRUN PREVIOUS ORDERS \$945 00

TOTAL OVERRUN TO DATE \$945 00

TOTAL \$2,962,369 56

BY  DATE 9/4/09

Signatures Required on First Page Only

SUBMITTED RESIDENT ENGINEER DATE

APPROVAL RECOMMENDED DISTRICT ENGINEER DATE

APPROVED - STATE CONSTRUCTION & MATERIALS ENGINEER DATE

Change Order Reasons

Line Item Number	Reason Code	Description and Reason for Change
0010	VE	VE- Line No. 0010 - Bituminous Pavement Mixture PG64-22 (BP-2) - Underrun: The original quantity for the shoulders was depicted to use 1.5" BP-2, PG64-22 totaling 13,980.20 tons from log mile 124.681 to 145.600. This quantity will be reduced as a result of the 1/2" scratch mill process being performed on mainline pavement. With this operation a 1" BP-2 PG64-22 material will be utilized on the shoulders instead of the 1.5" depth set up in the contract, thus reducing original quantities. The estimated quantity for this item will be 9,367.20 tons.
0020	VE	VE- Line No. 0020 - Asphalt Concrete Mixture PG 70-22 (SP095C Mix) - Underrun: Same as Line No. 5004.
5002	VE	VE- Line No. 5002 - MISC. Costs Value Engineering Scratch Milling 50/50 Split - Overrun: Settlement of Costs based on the agreed upon price of \$217,127.18 for the 50/50 split of the proposed value engineering savings. The contract was initially setup for 1.5" overlay of SP095C, PG 70-22 Bituminous Mixture on the existing roadway. A value engineering proposal was made and accepted to perform a scratch mill of the existing surface to a depth of 1/2" in each 12' driving lane from log mile 124.681 to 145.600. In performing this operation the contractor will be able to use RAP off of the project which will eliminate any hauling of RAP material from offsite for plant production. MoDOT will receive the benefit by the reduced cost per ton of mix placed. The value engineering proposal will also result in a savings from the quantity of pavement material to address rutting irregularities for the project. Mix depth will also be reduced to a 1" depth on the shoulders of the project as a result of the milling operation on the driving lanes. This is an estimated savings which will be revised based on final installed quantities for the project.
5003	VE	VE- Line No. 5003 - Coldmilling Bit. Pavement for Removal of Surface - Overrun: Settlement of Costs based on the agreed upon price of \$0.67/SY for a 1/2" Scratch Mill. A value engineering proposal was made and accepted to perform a scratch mill of the existing surface to a depth of 1/2" in each 12' driving lane from log mile 124.681 to 145.600. In performing this operation the contractor will be able to use RAP off of the project which will eliminate any hauling of RAP material from offsite for plant production. MoDOT will receive the benefit by the reduced cost per ton of mix placed. The value engineering proposal will also result in a savings from the quantity of pavement material to address rutting irregularities for the project. Mix depth will also be reduced to a 1" depth on the shoulders of the project as a result of the milling operation on the driving lanes. This is an estimated amount which will be revised based on final installed quantities for the project.
5004	VE	VE- Line No. 5004 - Asphalt Concrete Mixture PG 70-22 (SP095C Mix) - Overrun: Settlement of Costs based on the agreed upon price of \$62.02/Ton for Asphalt Concrete Mixture PG 70-22 (SP095C Mix). A value engineering proposal was made and accepted to perform a scratch mill of the existing surface to a depth of 1/2" in each 12' driving lane from log mile 124.681 to 145.600. In performing this operation the contractor will be able to use RAP off of the project which will eliminate any hauling of RAP material from offsite for plant production. MoDOT will receive the benefit by the reduced cost per ton of mix placed. The value engineering proposal will also result in a savings from the quantity of pavement material to address rutting irregularities for the project. Mix depth will also be reduced to a 1" depth on the shoulders of the project as a result of the milling operation on the driving lanes. This is an estimated amount which will be revised based on final installed quantities for the project.

Contract ID: 091023-403

Fed St/Pr Proj Nbr: FAF-71-4(105)

Status: Active

Primary PCN: J4P1958

District: 04

OrgCode: 4CJ

Funding

☒ Federal
☐ State/Province
☐ Both

Progress Sched:

Variance Pct: .00

Desc: J4P1958 - ROUTE 71 - CASS COUNTY

Time Charges: Completion Date

Bid Days: 332

Bid Amt: \$3,602,949.21

Contract Type: Construction Project Above \$500,000

☐ Fed Oversight

Work Type: ASPHALT PROJECTS

☐ Local Oversight

Proposal Fund Type:

Spec Yr: 1996

Unit System: English

Suppl Spec Bk Yr: 1996

Alt ID:

VALUE ENGINEERING CHECK SHEET

TYPE OF WORK

(Check one that applies)

- ☐ Bridge/Structure/Footings
- ☐ Drainage Structures (RCP, RCB, CMP's, ect.)
- ☐ TCP/MOT
- ☒ Paving (PCCP, ect.)
- ☐ Grading/MSE Walls
- ☐ Signal/Lighting/ITS
- ☐ Misc. _____

SUMMARY OF PROPOSAL

(If needed, condense summary to a couple of lines)

____ Use scratch-mill to reduce the amount of SP 125 needed for irregularities.

SCANNING OF DOCUMENT

If the proposal is large, please mark or make note, which pages need to be scanned into the database. If there are special instructions, make note of them here.

____ Scan proposal only.